	Type	L #	Hits	Search Text	DBs	Time Stamp
1	BRS	L1	1	(george and cameron and huang).in.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:16
2	BRS	L2	27	(cameron and huang).in.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:27
3	BRS	L3	0	2 and snapshot	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:27
4	BRS	L4	26089	(cameron or huang).in.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:27

	Type	L #	Hits	Search Text	DBs	Time Stamp
5	BRS	L5	75	4 and snapshot	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:28
6	BRS	L6	32	4 and snapshot and (read adj2 only or rom)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:28
7	BRS	L7	21	4 and snapshot and (read adj2 only or rom) and write	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:37
8	BRS	L8	0	4 and snapshot same (read adj2 only or rom) same write	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:29

	Type	L #	Hits	Search Text	DBs	Time Stamp
9	BRS	L9	0	4 and (snapshot and read$4 and writ$4).clm.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:30
10	BRS	L10	0	4 and (snapshot and read$4 and writ$4).ab.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:30
11	BRS	L11	1	"6823376".pn.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:31
12	BRS	L12	15	(snapshot and (read adj2 only or rom) and write).clm.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:55

	Type	L #	Hits	Search Text	DBs	Time Stamp
13	BRS	L13	3	(snapshot same (read adj2 only or rom) same write).clm.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:54
14	BRS	L14	1	"6434681".pn.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:54
15	BRS	L15	0	13 and 14	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:54
16	BRS	L16	0	12 and 14	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 10:54

	Type	L #	Hits	Search Text	DBs	Time Stamp
17	BRS	L17	0	14 and (snapshot and (read adj2 only or rom) and write)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 11:07
18	BRS	L18	1	14 and (snapshot same read$4 same writ$4)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 11:22
19	BRS	L19	4206	(711/162 or 711/202 or 707/204 or 711/205).ccls.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 11:23
20	BRS	L20	3	12 and 19	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 11:24

	Type	L #	Hits	Search Text	DBs	Time Stamp
21	BRS	L21	0	6 and 19	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	2006/05/08 11:24

PGPUB-DOCUMENT-NUMBER: 20050065986

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050065986 A1

TITLE: Maintenance of a file version set including read-only and read-write snapshot copies of a production file

PUBLICATION-DATE: March 24, 2005

US-CL-CURRENT: 707/204

APPL-NO: 10/668546

DATE FILED: September 23, 2003

———— KWIC ————

Claims Text - CLTX (2):
  1. A file server comprising storage containing a file system, and a processor coupled to the storage for accessing the file system, wherein the
file system includes a production file, read-only snapshot copies of the production file, and at least one read-write snapshot copy of the production file, wherein the production file and the snapshot copies of the production file are organized as a version set including an inode for the production file, and an inode for each snapshot copy of the production file, and a set of file blocks including data blocks and indirect blocks that are shared among the production file and the snapshot copies of the production file.

Claims Text - CLTX (6):
  5. The file server as claimed in claim 4, wherein the inode for each read-write snapshot copy of the production file is linked to a corresponding one of the nodes for the read-only snapshot copies of the production file.

Claims Text - CLTX (7):
  6. The file server as claimed in claim 1, wherein each inode in the

version
set includes a version pointer field and a branch pointer field, contents of
the version pointer fields link the nodes of the read-only snapshot copies of
the production file into the version set, and contents of the branch pointer
fields link each inode of each read-write snapshot copy of the production
file
into the version set.

Claims Text - CLTX (9):
8. The file server as claimed in claim 7, wherein the contents of the
branch pointer fields link each inode of each read-write snapshot copy of
the
production file system to an inode of a respective one of the read-only
snapshot copies of the production file.

Claims Text - CLTX (11):
10. The file server as claimed in claim 9, wherein each path name for a
read-write snapshot copy of the production file includes the name for the
production file followed by a delimiter symbol followed by a name for a
read-only snapshot copy of the production file followed by a delimiter
symbol
followed by a name for the read-write snapshot copy of the production file.

Claims Text - CLTX (12):
11. The file server as claimed in claim 1, wherein the file server is
programmed for creating a new read-only snapshot copy of the production
file,
creating a new read-write snapshot copy of the production file, deleting a
snapshot copy of the production file from the version set, restoring the
production file with a specified snapshot copy of the production file,
refreshing a specified snapshot copy of the production file, and naming the
files in the version set.

Claims Text - CLTX (30):
29. A file server comprising storage containing a file system, and a
processor coupled to the storage for accessing the file system, wherein
the
file system includes a production file, read-only snapshot copies of the
production file, and at least one read-write snapshot copy of the production
file, wherein the production file and the snapshot copies of the production

file are organized as a version set including an inode for the production file and an inode for each snapshot copy of the production file, and a set of file blocks including data blocks and indirect blocks that are shared among the production file and the snapshot copies of the production file, wherein the file server further includes: means for creating new read-only snapshot copies
of the production file; means for creating new read-write snapshot copies of
the production file; means for deleting a specified snapshot copy of the production file from the version set; means for restoring the production file with a specified snapshot copy of the production file; means for refreshing a
specified snapshot copy of the production file; and means for naming the files
in the version set.

Claims Text - CLTX (40):
39. The file server as claimed in claim 38, which is programmed to prepare
to restore the production file by creating a read-write snapshot copy of the specified snapshot copy of the production file, and which is programmed to commit the preparation by replacing the production file with the read-write snapshot copy of the specified read-only snapshot copy of the production file
and deleting the production file, so that the read-write snapshot copy of the
specified snapshot copy of the production file assumes the identity of the production file.